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IS 5481 (1992): Floor polish, liquid [CHD 23: Lac, Lac Products and Polishes]

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फर्श की पालिश, तरल — विशिष्ट  
( पहला पुनरीक्षण )

*Indian Standard*

FLOOR POLISH, LIQUID—SPECIFICATION  
( *First Revision* )

UDC 667·822 : 648·52

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BUREAU OF INDIAN STANDARDS  
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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Polishes Sectional Committee had been approved by the Chemical Division Council.

Liquid floor polishes are used to protect the wooden, linoleum, PVC and mosaic floor surfaces. Regular application of such polishes removes the ingrained dirt and grease, give hygenic and shining look and guards the floor surfaces against damage by scratches under normal conditions of use.

This standard was first published in 1969. This revision was taken up based on the experience of the industry for over two decades. In this revision, flash point has been reduced to 30°C, the drying time after spreading modified and a requirement for the polish to be non-injurious to health has been included.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

# FLOOR POLISH, LIQUID—SPECIFICATION

## (First Revision)

### **1 SCOPE**

**1.1** This standard prescribes the requirements and the methods of sampling and test for wax-solvent and wax-emulsion types of liquid floor polishes.

**1.1.1** This standard does not cover the liquid floor polishes which need no buffing and those which are pigmented.

### **2 REFERENCES**

The Indian Standards listed below are the necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1070 : 1977	Water for general laboratory use ( <i>second revision</i> )
1448 ( Part 20 ) : 1982	Methods of test for petroleum and its products : Part 20 Flash point by Abel apparatus ( <i>first revision</i> )
8171 : 1984	Glossary of terms relating to polishes and related materials ( <i>first revision</i> )

### **3 TERMINOLOGY**

For the purpose of this standard, the definitions given in IS 8171 : 1984 in addition to the following shall apply.

#### **3.1 Ambient Temperature**

It is the temperature between 21°C and 38°C.

### **4 REQUIREMENTS**

#### **4.1 Composition**

The liquid floor polish shall consist of waxes, additives, etc., and organic solvents with or without water and an emulsifier.

#### **4.2 Odour**

The polish shall not have any disagreeable odour.

#### **4.3 Colour**

The polish may be slightly tinted with an oil soluble colour to improve its appearance as agreed to between the purchaser and the supplier.

#### **4.4 Consistency**

The polish shall be of free flowing consistency and shall maintain its flow characteristics between the temperatures 10°C and 50°C.

#### **4.5 Stability**

**4.5.1** On pouring the contents of a filled container into a glass bottle after vigorously shaking the container for 5 minutes, there shall not be any hard caky material at the bottom of the container when examined with a clean metal or glass rod.

**4.5.2** The polish shall maintain its general characteristics and shall not break down into its constituents or emit any disagreeable odour when kept at 50°C for 48 hours nor shall it set into a hard mass when kept at 10°C for 8 hours.

#### **4.6 Polishing Characteristics**

**4.6.1** The polish shall be so constituted and prepared that on application by means of a clean cloth it shall spread easily and evenly and shall give with minimum of buffing a firm glossy surface free from any greasiness.

**4.6.2** The polish film after spreading with a cloth shall not take more than 10 minutes to dry.

**4.6.3** The polish surface after the removal of ingrained dirt and greasy matter should present a brighter look.

**4.7** The polish shall also comply with the requirements given in Table 1.

**Table 1 Requirements for Floor Polish, Liquid**

SI No.	Characteristic	Requirement	Method of Test (Ref. to Cl No. in Annex A)
(1) i)	(2) Non-volatile matter, percent by mass	'3) 7 to 17	(4) A-1
ii)	Melting point of non-volatile matter, °C, Min	70	A-2
iii)	pH of the polish	6 to 9	A-3
iv)	Flash point of organic solvent, °C, Min	30	A-4
v)	Ash of non-volatile matter, percent by mass, Max	1·5	A-5

#### 4.8 Keeping Quality

The floor polish shall retain the properties specified in this standard for two years from the date of manufacture when stored in its original sealed containers under cover at ambient temperature.

**4.9** The polish shall contain no ingredients which may be injurious to health under normal conditions of use.

### 5 PACKING AND MARKING

#### 5.1 Packing

The polish shall be supplied in sound, clean and dry containers compatible with the product preferably of 200 ml capacity or as agreed to between the purchaser and the supplier.

**5.1.1** The containers shall be fitted with caps which can be easily closed or opened and which will prevent evaporation of the solvent and ingress of dirt.

**5.1.2** The containers shall be packed first in lots of 10 in cartons and the cartons in turn in lots of 10 in cardboard boxes or wooden boxes, or as agreed to between the purchaser and the supplier.

#### 5.2 Marking

**5.2.1** The containers shall be marked with the following:

- a) Indication of source of manufacture;
- b) Net mass of material when packed;

- c) Name of the material;
- d) Description of the surface material (flooring) for which it is specially intended;
- e) The words 'Store in a cool place away from heat and open flame';
- f) Directions for use; and
- g) Month and year of manufacture.

NOTE — Any other marking required under weights and measures (Packaged commodities) Regulations 1977 may also be given.

### 6 SAMPLING

**6.1** For the purpose of ascertaining the conformity of the material to this specification, representative samples shall be drawn as prescribed in Annex B.

### 7 TEST METHODS

**7.1** Representative samples of the material shall be tested in accordance with the methods referred to in col 4 of Table 1.

#### 7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (see IS 1070 : 1977) shall be used in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

### ANNEX A

[Table 1]

### METHODS OF TEST FOR FLOOR POLISH, LIQUID

#### A-1 DETERMINATION OF NON-VOLATILE MATTER

##### A-1.1 Procedure

Weigh accurately about 10 g of the polish in a tared flat-bottomed dish of approximately 10 cm diameter provided with a cover. Heat without the cover on a steam-bath till the bulk of the volatile matter is volatilized off and then transfer the dish to an air-oven kept at 110 to 120°C and keep it at this temperature for 4 hours. Cool and weigh. Repeat heating and cooling till the two successive weighings differ by not more than one milligram. Keep the non-volatile residue for further testing.

##### A-1.2 Calculation

$$\text{Non-volatile matter, percent by mass} = \frac{100 B}{A}$$

where

B = mass in g of the non-volatile residue, and

A = mass in g of the sample taken for the test.

NOTE — If the polish gives too much frothing on heating in a water-bath, add 2 ml of dilute hydrochloric acid (10 percent w/v). To obtain the correct figure for non-volatile matter residue, subtract 0.1 g from the mass of the residue obtained.

#### A-2 DETERMINATION OF MELTING POINT OF NON-VOLATILE MATTER

**A-2.1** Place a thin slice (approximately 2 mm × 2 mm × 0.5 mm) of the residue obtained as in **A-1.1** on the surface of mercury contained in a porcelain or silica crucible of capacity about 25 ml and exposed diameter about 45 mm. Heat the

crucible on an electric hot-place or sand-bath at such a rate that the temperature of the mercury rises at the rate of 1 degree per minute from 20 degree below the melting point of the material. Record the temperature of the mercury by any suitable thermometer having 1 degree graduations. Note the temperature at which the residue loses its shape and record the result to the nearest 1 degree.

### A-3 DETERMINATION OF pH OF THE POLISH

#### A-3.1 Wax-Emulsion Type Polish

Determine the pH of the sample using pH meter with a glass electrode.

#### A-3.2 Wax-Solvent Type Polish

Add about 15 g of the polish to 100 ml of distilled water in a beaker. Heat with stirring till all the water soluble matter is extracted. Allow to cool to ambient temperature. Separate the aqueous layer from the wax polish and determine its pH using a pH meter with a glass electrode.

### A-4 DETERMINATION OF FLASH POINT OF ORGANIC SOLVENT

**A-4.1** Take about 200 ml of the floor polish and distil it under reduced pressure so that all the

volatile fractions are distilled over. Separate the organic solvent from water, if present, by a separating funnel. Shake the solvent with fused calcium chloride or anhydrous magnesium sulphate. Determine the flash point of the solvent by the method prescribed in IS 1448 [ P : 20 ] : 1982.

## A-5 DETERMINATION OF ASH OF NON-VOLATILE MATTER

### A-5.1 Procedure

Weigh accurately about 2 g of the non-volatile residue obtained as in A-1.1 in a tared porcelain crucible. Ignite to constant mass, cooling in a desiccator before each weighing.

#### A-5.1.1 Calculation

$$\text{Ash of non-volatile matter, percent by mass} = \frac{100 B}{A}$$

where

B = mass in g of the ash, and

A = mass in g of the non-volatile residue.

## ANNEX B

( Clause 6.1 )

### SAMPLING OF FLOOR POLISH

#### B-1 GENERAL REQUIREMENTS FOR SAMPLING

**B-1.0** In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

**B-1.1** Samples shall be taken in a protected place not exposed to damp air, dust or soot.

**B-1.2** The sampling instrument shall be clean and dry when used.

**B-1.3** Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

**B-1.4** Samples shall be placed in clean, dry and air-tight glass containers or other suitable containers on which the materials has no action.

**B-1.5** The sample containers shall be of such a size that they are almost completely filled by the sample.

**B-1.6** Each sample container shall be sealed air-tight after filling and marked with full details of

sampling, the date of sampling and the year of manufacture of the material.

**B-1.7** Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

#### B-4 SCALE OF SAMPLING

**B-4.0** Samples to determine conformity of a consignment of floor polish to this specification shall be selected so as to be representative of the consignment. Samples drawn in compliance with an agreement between the purchaser and the supplier to evaluate the various characteristics of the polish shall be held to be representative of the consignment. In case of dispute, the following sampling scheme is recommended to serve as a guide.

#### B-4.1 Lot

All the containers in a single consignment of the material drawn from the same batch of manufacture and of the same size shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture or of different size of containers, the containers belonging to the

same batch and size shall be grouped together and each group shall constitute a separate lot.

**B-2.1.1** Samples shall be tested for each lot for ascertaining the conformity of the material to the requirements of this specification.

**B-2.2** The number of containers ( $n$ ) to be chosen from a lot shall depend upon the size of the lot ( $N$ ) and shall be in accordance with Table 2.

**B-2.3** These containers shall be chosen at random from the lot. In order to ensure the randomness of selection, some random number table as agreed to between the purchaser and the supplier shall be used. In case such a table is not available, the following procedure shall be adopted:

Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2, 3 .., up to  $r$  is the integral part of  $N/n$ . Every  $r$ th container thus counted shall be withdrawn to give sample for test.

**Table 2 Number of Containers to be Selected**  
( Clause B-2.2 )

Lot Size	No. of Containers to be Selected
$N$	$n$
Up to 500	10
501 to 1 000	15
Above 1 000	20

### **B-3 PREPARATION OF COMPOSITE SAMPLE**

**B-3.1** Shake well each of the containers selected according to **B-2.3** and pour out a quantity of polish such that the total quantity obtained from all the containers provides material sufficient for all the tests ( about 500 g ). Thoroughly mix the material drawn from all the selected containers so as to form the composite sample.

### **B-4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY**

**B-4.1** The material in each of the containers selected according to **B-2.2** shall be examined for consistency and stability of the polish before proceeding to further tests.

**B-4.1.1** If required by the purchaser, floor polish from three of the sample containers shall be individually tested for stability under control temperatures as prescribed in **2.5.2**.

**B-4.2** Tests for other characteristics shall be done on the composite sample.

**B-4.3** The lot shall be declared as conforming to this specification if the test results satisfy the corresponding requirements laid down in this specification.

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